




FIG. 226. BUTTONS' PLIERS.

The Buttons' Patent Combined Wire Cutters and Pliers are made by J. M. King & Co., and are very useful tools for general purposes.

4½ in.,	\$0.50,	cuts wire up to No. 14.
6 "	0.60,	" " " " 11.
8 "	0.75,	" " " " 8.
10 "	1.00,	" " " " 6.



Diam., Inches.	Hand.	Each.	Threads to Inch.	
$\frac{1}{8}$	R	\$0.23	30	32
$\frac{1}{4}$	R	.23	24	26 28
$\frac{3}{8}$	R	.23	18	20 22 24
$\frac{1}{2}$	R	.23	16	18 20 22
$\frac{5}{8}$	R	.27	14	16 18 20
$\frac{3}{4}$	L	.30	14	
$\frac{7}{8}$	R	.30	12	14 16 18
1	L	.30	12	14
$1\frac{1}{8}$	R	.30	10	12 14 16
$1\frac{1}{4}$	L	.38	12	
$1\frac{3}{8}$	R	.38	10	12 14 16
$1\frac{1}{2}$	L	.38	10	12
$1\frac{3}{4}$	R	.38	10	11 12 14
2	L	.50	10	12
$2\frac{1}{4}$	R	.50	9	10 12 14
$2\frac{1}{2}$	L	.70	9	
$2\frac{3}{4}$	R	.70	8	9 10
3	L	.95	8	9
4	R	.95	7	8 9 10
$4\frac{1}{2}$	L	1.45	8	9
$5\frac{1}{4}$	R	1.45	6	7 8 9
$5\frac{1}{2}$	L	2.25	6	7 8
$5\frac{3}{4}$	R	2.25	6	7 8

FIG. 545.

In Blacksmiths' Taper Taps, Fig. 545, we carry in stock those made by J. M. King & Co. Other Tap manufacturers make neater looking, more finely finished and perhaps, more accurately cut Taps, but our blacksmith customers seem to invariably prefer the King Tap.

#### LEFT HAND TAPS.

We carry in stock quite an assortment of Taps of Standard Sizes with Left Hand Threads. To obtain prices on these add 25 per cent. to price list.

#### FINE THREAD TAPS.

Taps with fine threads are used principally for Brass Tubing, and for Brass work generally. There has never been an established standard of threads, and in our experience, we have found that 27 threads to the inch proves more acceptable than any other. We carry them in stock in Plug Hand Tap Style, in sizes from  $\frac{1}{4}$  to 1 inch, and prices are as given in following table:

Size,	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$
Each, \$	0.45	.45	.50	.50	.55	.55
Size,	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$	1	1	1
Each, \$	0.70	.80	.90	1.05	1.20	1.60

Dies with 27 threads to the inch to match these will be found on page 145.

#### OVER-SIZE TAPS.

The term "over-size" as applied to taps, is not as indefinite a quantity as the name itself might signify. In any of the manufacturers' or trade catalogues, printed up to within the past year or two, the following announcement will almost invariably be found in connection with certain styles of taps, "Unless otherwise advised, orders will be filled with taps  $\frac{1}{8}$  of an inch over-size for rough iron."

This announcement is being withdrawn, and in the later catalogues it is plainly stated that exact-size taps will always be sent, *unless otherwise specified*.

The common use of over-size Taps was due to the fact, that the ordinary round bar iron sold throughout the country, was always rolled from  $\frac{1}{4}$  to  $\frac{3}{4}$  of an inch larger than the stated size. For example— $\frac{1}{2}$  inch round iron (so-called) measured nearly  $\frac{1}{4}$ , and  $\frac{3}{4}$  inch,  $\frac{1}{2}$ .

At the present time, and for some few years past, rolling mills have sent out round iron that is made exact to size, or practically so.

The use of over-size taps, for certain purposes, is still continued, however. We would judge that more than nine-tenths of the Blacksmiths' Sets of Taps and Dies, such as the "Little Giant," "Lightning," "Green River," etc., etc., are furnished with the taps and dies both  $\frac{1}{8}$  of an inch over-size.

The Hand Nut Tap, Fig. 533, and the Bit Brace Tap, Fig. 542, are sold almost invariably  $\frac{1}{8}$  of an inch over-size; and Machine, or Nut Taps, Fig. 534, are sold over-size in the proportion of about three to one of exact size.

**PREVENTING TOOLS FROM RUSTING.**—A simple preparation employed by Professor Olmstead, of Yale College, for the preservation of scientific apparatus, and which he long ago published for the general good, declining to have it patented, is made by the slow melting together of six or eight parts of lard to one of resin, stirring until cool. This remains semi-fluid, ready for use; the resin preventing rancidity and supplying an air tight film. Rubbed on a bright surface ever so thinly, it protects and preserves the polish effectually, and it can be wiped off nearly clean, if ever desired, as from a knife blade; or it may be thinned with coal oil or benzine.

## SCREW PLATES, OR STOCKS AND DIES.

In the past twenty years or so there has been considerable of an evolution both in the manufacture and sale of screw-plates. In the old style of taps and dies, duplication or interchangeability of pieces was evidently never considered. The bolt was threaded and the nut tapped to fit, or vice versa. The taps were usually tapering so that if a size could not be obtained in one part it could in another. The cut, Fig. 550, is reproduced from an illustration in P. S. Stubs' catalogue just received; it represents about as primitive a style as can well be imagined. From the fact of its being shown in this catalogue, we are led to infer that there must still be a sale (in some lands) for this style of plate.

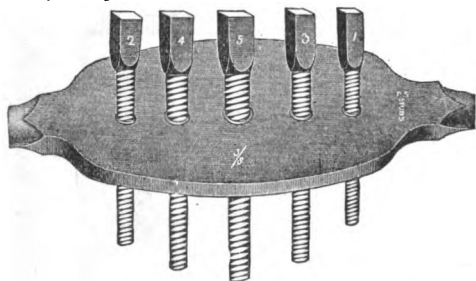


FIG. 550

We sell quite a few small size Stubs' plates, Fig. 564, page 148. They are used mainly by model makers for small tinkering work, where the sizes wanted are odd, and unlike anything "In the heavens above, or on the earth beneath."

In 1829 Daniel B. King started the manufacture of screw-plates in Waterford, N. Y., and this factory still continues in operation, making the style of plates shown in Figs. 572 and 573, page 151. This style of plate has been always furnished with taper taps, and without reference to any standard as far as either sizes or threads are concerned; in some cases, two taps and two sets of dies being used to cut all sizes from  $\frac{1}{8}$  to  $\frac{1}{2}$  inch.

The machinists' plates made by Card & Co., page 149, are similar in design, but are better made in every way; are furnished in great variety of standard sizes, and are supplied with machinist hand taps.

## KING'S STOCKS AND DIES.\*

This line of Stocks and Dies has been on the market upwards of 60 years; there has been, and always will be, a large sale for these plates on account of the low

No. 15, \$8.00, cuts from  $\frac{1}{8}$  to  $1\frac{1}{2}$  inches : has 3 pairs of Dies and 5 Taps, cutting, 8, 10 and 12 threads.

No. 23, \$4.00, cuts from  $\frac{1}{8}$  to 1 inch ; has 3 pairs of Dies and 3 Taps, cutting 9, 10 and 14 threads.



FIG. 572.

price at which they are sold. This is the style of Stock and Dies usually furnished with farmers' and blacksmiths' "outfits." We print here the more commonly sold sizes, and can furnish, if desired, twenty-one assortments besides these.

No. 34, \$3.60, cuts from  $\frac{1}{8}$  to  $\frac{1}{2}$  inch ; has 3 pairs of Dies and 3 Taps, cutting 10, 12 and 16 threads.

No. 34A, \$3.60, cuts from  $\frac{1}{8}$  to  $\frac{1}{2}$  inch ; has 3 pairs of Dies and 3 Taps, cutting 10, 12 and 14 threads.



FIG. 573.

The numbers which follow from 9 to 60 inclusive, are of the style as shown in Fig. 572.

No. 9, \$9.60, cuts from  $\frac{1}{8}$  to  $1\frac{1}{2}$  inch ; has 3 pairs of Dies and 6 Taps, cutting 8, 10 and 12 threads to the inch.

No. 19, \$7.20, cuts from  $\frac{3}{8}$  to 1 inch ; has 3 pairs of Dies and 6 Taps, cutting 9, 12 and 14 threads.

No. 27, \$5.20, cuts  $\frac{3}{8}$  to  $\frac{1}{2}$  inch ; has 3 pairs of Dies and 6 Taps, cutting 10, 12 and 16 threads.

No. 47, \$4.40, cuts from  $\frac{1}{2}$  to  $\frac{3}{4}$  inch ; has 3 pairs of dies and 6 Taps, cutting 12, 14 and 18 threads.

No. 51, \$3.60, cuts from  $\frac{3}{8}$  to  $\frac{1}{2}$  inch ; has 3 pairs of Dies and 6 Taps, cutting 14, 18 and 22 threads.

No. 60, \$5.75, cuts from  $\frac{1}{2}$  to  $\frac{3}{4}$  inch ; has 4 pairs of Dies and 6 Taps, cutting, 10, 12, 14 and 18 threads.

The numbers which follow from 15 to 55 inclusive, are of the style as shown in Fig. 573.

No. 34B, \$3.60, cuts from  $\frac{1}{8}$  to  $\frac{1}{2}$  inch ; has 3 pairs of Dies and 3 Taps, cutting 12, 14 and 16 threads.

No. 35, \$3.20, cuts from  $\frac{3}{8}$  to  $\frac{1}{2}$  inch ; has 2 pairs of Dies and 2 Taps, cutting 10 and 14 threads.

No. 37, \$3.40, cuts from  $\frac{1}{8}$  to  $\frac{3}{4}$  inch ; has 3 pairs of Dies and 6 Taps, cutting 14, 18 and 22 threads.

No 37A, \$3.40, cuts from  $\frac{1}{8}$  to  $\frac{3}{4}$  inch ; has 3 pairs Dies, and 6 Taps, cutting 12, 14 and 16 threads.

No. 37B, \$3.40, cuts from  $\frac{1}{8}$  to  $\frac{3}{4}$  inch, has 3 pairs of Dies and 6 Taps, cutting, 14, 16 and 18 threads.

No. 41, \$2.95, cuts from  $\frac{1}{2}$  to  $\frac{1}{2}$  inch ; has 3 pairs of Dies and 6 Taps, cutting 16, 20 and 26 threads.

No. 41A, \$2.60, cuts from  $\frac{1}{2}$  to  $\frac{1}{2}$  inch ; has 3 pairs of Dies and 6 Taps, cutting 14, 16 and 18 threads.

No. 41B, \$2.95, cuts from  $\frac{1}{2}$  to  $\frac{1}{2}$  inch ; has 3 pairs of Dies and 6 Taps, cutting 16, 18 and 20 threads.

No. 53, \$2.50, cuts from  $\frac{1}{8}$  to  $\frac{1}{8}$  inch ; has 4 pairs of Dies and 4 Taps, cutting 16 ; 20, 24 and 32 threads.

No. 55, \$2.25, cuts from  $\frac{1}{8}$  to  $\frac{1}{8}$  inch ; has 3 pairs of Dies and 4 Taps, cutting 18, 20 and 24 threads.

\* A great many of King's Plates are lying about shops useless, for lack of Dies. We can furnish Dies of any threads or size in pairs or sets for these Plates. Please state number of Plate when ordering Dies.